A.D. 1873, 28th June. Nº 2257.

SPECIFICATION

OF

GEORGE HASELTINE.

INHALING APPARATUS.

LONDON:
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1873.

A.D. 1873, 28*th June.* N° 2257.

Inhaling Apparatus.

LETTERS PATENT to George Haseltine, of the "International Patent Office," Southampton Buildings, London, Doctor of Laws, for the Invention of "Improvements in Inhaling Apparatus."—A communication from abroad by Clifton David Hunter, of Marlborough, Massachusetts, United States of America.

Sealed the 15th August 1873, and dated the 28th June 1873.

COMPLETE SPECIFICATION filed by the said George Haseltine at the Office of the Commissioners of Patents, with his Petition and Declaration, on the 28th June 1873, pursuant to the 9th Section of the Patent Law Amendment Act, 1852.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, George Haseltine, of the "International Patent Office," Southampton Buildings, London, Doctor of Laws, send greeting.

WHEREAS I am in possession of an Invention for "Improvements in Inhaling Apparatus," and have petitioned Her Majesty to grant unto me, my executors, administrators, and assigns, Her Royal Letters Patent for the same, and have made solemn Declaration that it has been communicated to me from abroad by Clifton David Hunter, of Marlborough, Massachusetts, United States of America.

NOW KNOW YE, that I, the said George Haseltine, do hereby declare that the following Complete Specification, under my hand and seal, fully describes and ascertains the nature of the said Invention, and in what manner the same is to be performed, in and by the following statement, reference being had to the accompanying Drawing making part of this Specification :—

Vapor inhalers as heretofore constructed are objectionable for the reason that the act of blowing or breathing down the exhaust or inhaling tube will cause the liquid in the main receptacle to rise in the inlet tube and flow into the acid vessel, thus destroying the power of the acid and necessitating the emptying and re-supplying of the main receptacle and the acid vessel.

The first part of this Invention has for its purpose to overcome this difficulty, and consists in the application of a valve to the exhaust tube or passage or to the inlet tube, which valve will instantly close should any person inadvertently breathe or blow into the exhaust tube, thus preventing the rising of the liquid in the main receptacle into the inlet tube and mixing with the contents of the acid vessel, the valve also prevents the evaporation of the volatile portion of the liquid in the main receptacle. The acid vessel has heretofore been connected with the inlet tube and placed either inside or outside of the main receptacle, and was consequently extremely liable to be injured or broken.

The second part of this Invention consists in placing the acid vessel within a cavity or recess within the stopper of the main receptacle, whereby the danger of breaking the acid vessel is avoided.

The third part of the said Invention consists in providing the stopper of the main receptacle with a groove or recess for the reception of the upper portion of the inlet tube when forced down, whereby it is protected from injury. The inlet tube is so constructed and arranged that when disconnected from the acid vessel and swung around, its end when forced down will enter and close the exhaust passage in the stopper after the removal of the exhaust tube therefrom, by which means the escape of the liquid from the main receptacle is prevented should the apparatus be inverted in travelling.

The fourth part of the said Invention consists in a band so fitted to the stopper of the main receptacle that it may be stretched over the stopper of the acid vessel to hold it in place, and over the top of the inlet tube to protect it and the vessel from injury when the inhaler is packed for travelling.

The fifth part of the said Invention consists in the applicaton of a valve to the inlet tube, whereby all liability is avoided of the rising of the liquid therein when the stopper is inserted into the mouth of the main receptacle.

The sixth part of the said Invention consists in a modification hereafter described.

DESCRIPTION OF THE DRAWING.

Figure 1 is a perspective view of the said improved apparatus ready for use; Figure 2 is a vertical section through the same.

Figure 3 is a perspective view of the said apparatus ready to be packed for travelling, the protecting band being thrown to one side; Figure 4 is a view showing the said protecting band in place; Figure 5 is a sectional view of details.

Figure 6 is a view of a nasal tube herein-after described.

Figure 7 is a section through an apparatus, constructed in accordance with the said Invention, and having a valve applied to the lower end of its inlet tube.

Figure 8 represents a modification of the said Invention.

A is the main receptacle for containing the medicated liquid; B is a stopper of rubber or other suitable material provided with a passage *a* for the reception of the exhaust or inhaling tube C, through which the vapor is inhaled; *b* is the inlet tube which passes through the stopper, and extends nearly down to the bottom of the main receptacle, the upper end of this tube being bent, as seen in Figure 2, to receive the fumes of the muriatic acid in the vessel *c* placed in a cavity in the stopper B; the depth of the said cavity is such that only the upper edge of this vessel will project above the upper surface of the stopper, thus, as the air is exhausted from the receptacle A by the act of inhaling, the fumes of the acid are drawn down the inlet tube *b*, and passing through the medicated liquid containing a small quantity of concentrated aqua ammonia combine therewith and form the vapor to be inhaled. To the lower end of the exhaust passage *a* is fitted a metallic casing *q* containing a valve *d* which opens upwardly to allow of the passage of the vapor to be inhaled, but will instantly close and shut off communication should any one blow or breathe into the exhaust tube, thus preventing any pressure of air upon the surface of the medicated liquid and its consequent rise up the inlet tube into the acid vessel *c*; this mixture of the acid and medicated liquid destroys the power of generating vapor, and necessitates the emptying of the apparatus and a new supply of the medicated liquid and acid which is frequently required in inhalers as heretofore constructed, and which is a great objection to their use. The valve *d* also prevents the evaporation of the volatile portion of the medicated liquid which would occur if no valve were employed.

By embedding the acid receptacle within the stopper, as above described, it is effectually protected from breakage, which is not the case where it is placed inside or outside the main receptacle away from the stopper. When it is desired to pack the inhaler in a trunk or valise for travelling, it is not necessary to discharge the medicated liquid and the acid, but merely to raise the inlet tube *b* and disconnect it from the acid vessel, which must then be tightly closed by a stopper *e*, Figure 3. The inlet tube is now turned around until its end *f* is over the exhaust passage *a* (from which the exhaust tube has been previously removed), when it is forced down, as seen in Figure 5, the portion 10 resting in a groove *h* formed in the stopper B, and the end *f* fitting into and tightly closing the exhaust passage *a*. The escape of any of the medicated liquid from the main receptacle A through the inlet tube *b* or exhaust passage *a* is thus effectually prevented and the inhaler charged ready for use, can consequently be packed in a trunk or valise without liability to leakage. It will be seen that the groove *h* allows the portion 10 of the inlet tube to be forced down flush, or nearly so, with the upper surface of the stopper B, whereby it is protected from injury. When the parts are in the position seen in Figure 3, a band *i* of india-rubber or other suitable material (one end of which is permanently attached to one side of the stopper B) is stretched over the stopper *e* of the acid vessel and the inlet tube, and secured to the opposite side of the stopper B by a hook or catch *k*, as seen in Figure 4. This band serves to hold the stopper of the acid vessel in place, and protect it and the inlet tube when packed for travelling. The long tube C, Figure 1, may be replaced by the nasal tube D, Figure 6, when it is desired to inhale the vapor through the nose.

In Figure 7 the inlet tube *b* is represented as provided at its lower end with a valve *m* opening downward, so that any upward pressure on its under concave surface will instantly close it and thus prevent the entrance of any liquid. I am thus enabled by the use of this valve to effectually prevent the rising of the liquid in the inlet tube and its entering the acid vessel, which might occur when the stopper B was inserted into the mouth of the main receptacle, owing to the compression of the air within the latter. It is evident that the valve *m* may be used instead of the valve *d* as it will also prevent the rising of the liquid in the inlet tube should any person inadvertently breathe or blow into the exhaust tube. It is preferable however to retain the valve *d* as it prevents the evaporation of the volatile portion of the liquid in the main receptacle which would occur if the valve *m* only were employed. I do not confine myself to the use of a valve *m* of the particular construction shewn, as any other suitable valve may be used instead, and although I prefer to use both of the valves *d* and *m* yet either one can be used without the other if desired.

Figure 8 represents a modification of this Invention, in which neither of the valves *d* or *m* is employed. In this case the exhaust tube is of somewhat different construction from that above described; its vertical portion 11 above the stopper is provided at its top with a horizontal branch 12, at one end of which is a valve P opening outward, while to its opposite end is secured the mouth-piece 13 through which the vapor is inhaled, and during this operation the valve P is tightly closed by the pressure of the external air as a vacuum is created within the branch 12. Should however any person breathe or blow into the tube 13 the valve P will be instantly opened, allowing the air to escape at this point; the current of air passing through the horizontal branch 12 over the mouth or upper open end of the vertical portion 11 of the exhaust tube produces an upward current therein, and consequently no portion of the air blown into the mouth-piece can by any possibility pass down into the main receptacle and exert a pressure upon the medicated liquid therein; all liability is thus avoided of the liquid being forced up the inlet tube into the acid vessel.

Instead of employing an exhaust tube constructed as above described, and provided with a valve, an ordinary exhaust tube might be used, and the stopper B or main receptacle provided with a valve opening outward into the external air, in which case should a person breathe or blow into the exhaust tube the air would pass down into the main receptacle, but would instantly escape through the valve before it could exert any pressure upon the medicated liquid. This device is however but an equivalent of that first described, and either may be used as preferred.

Having thus fully described the said Invention as communicated to me by my foreign correspondent, and the manner of performing the same, I wish it understood that I claim,—

First. The valve *d*, in combination with the exhaust tube C, inlet tube *b*, stopper B, and main receptacle A, operating in the manner and for the purpose described.

Second. The stopper B provided with a cavity or recess for the reception of the acid vessel *c*, as and for the purpose set forth.

Third. The stopper *b* provided with a groove *h* for the reception of the upper portion 10 of the inlet tube *b* when forced down, the inlet tube being so constructed and arranged that it may close the exhaust passage and prevent the leakage or escape of the medicated liquid from the main receptacle when tipped or inverted, as herein described.

Fourth. The band *i* in combination with the acid vessel embedded in the stopper B, and the inlet tube *b*, as and for the purpose set forth.

Fifth. The inlet tube *b* provided with a valve *m*, as and for the purpose described.

Sixth. In combination with the main receptacle stopper exhaust tube and inlet tube of an inhaler, a valve so constructed and applied as to open outwardly on blowing into the exhaust tube, whereby the air is allowed to escape and is kept from exerting a pressure upon the liquid in the main receptacle, as and for the purpose described.

In witness whereof, I, the said George Haseltine, have hereunto set my hand and seal, this Twenty-eighth day of June, in the year of our Lord One thousand eight hundred and seventy-three.

GEORGE HASELTINE. (L.S.)

Witness,
JAMES EDWARDS,
8, Southampton Buildings,
London.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1873.

A.D. 1873. June 28. N° 2257.
HASELTINE'S Complete Specification.

(1 SHEET)

FIG. 1.

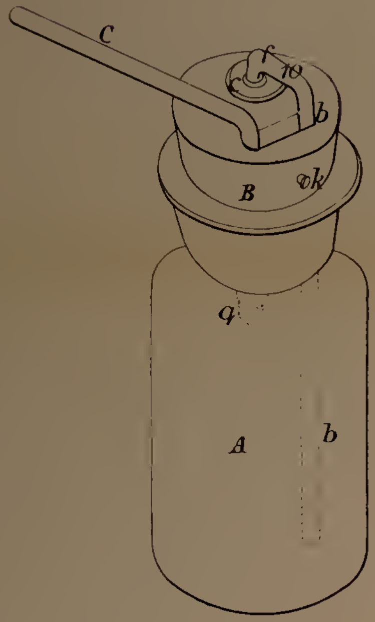


FIG. 2.

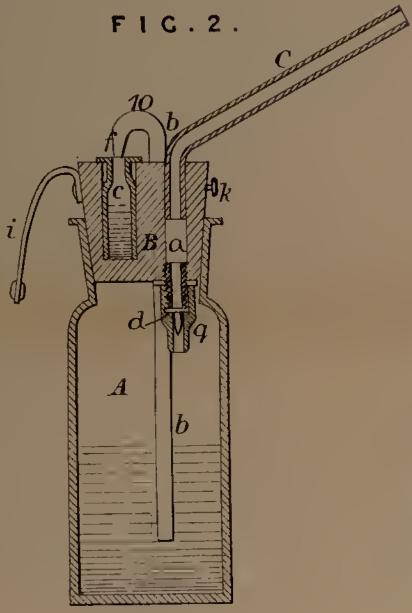


FIG. 8.

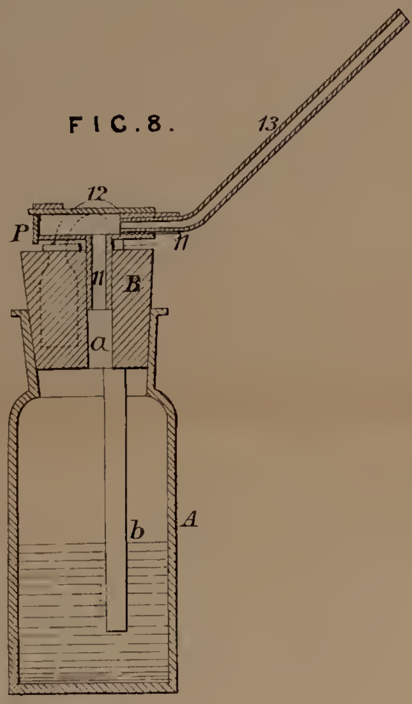


FIG. 7.

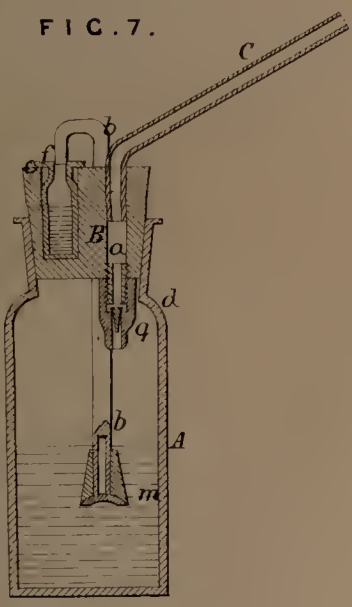


FIG. 3.

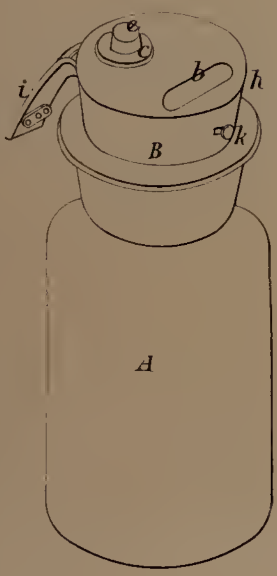


FIG. 4.

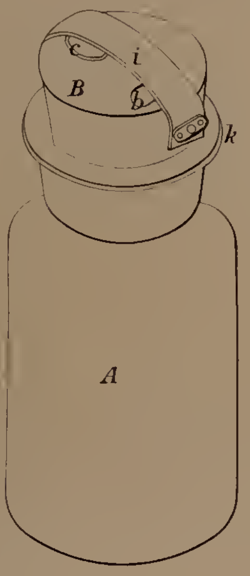


FIG. 5.

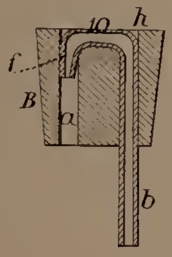
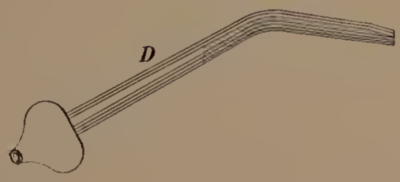


FIG. 6.



The filed drawing is not colored.

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